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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,358	10/24/2001	Tetsuroh Nakamura	5077-000070	6274
27572	7590	03/17/2004	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			NGUYEN, JUDY	
			ART UNIT	PAPER NUMBER
			2861	

DATE MAILED: 03/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/019,358	NAKAMURA ET AL.	
	Examiner	Art Unit	
	Judy Nguyen	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 8-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/24/2001</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Claims 8-22 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in Paper filed on 12/02/2003.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Akaha (JP 11-179903).

Akaha discloses all elements of the claimed invention as follows: An ink jet head, comprising a head body [10+120], which is provided with a plurality of nozzles [17] and a plurality of pressure chambers [12] and actuators [60+70+80] respectively corresponding to the nozzles [17], and a driver IC [140A] for outputting driving signals for driving the actuators [60+70+80], wherein: the actuators [60+70+80] are arranged on a surface of the head body [10+120] in a plurality of columns so as to form a plurality of

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actuator columns; signal input terminals [132] of the actuators [60+70+80] are arranged locally in a predetermined area between the actuator columns; the driver IC [140A] is provided with signal output terminals [141] arranged so as to respectively correspond to the signal input terminals [132] of the actuators [60+70+80]; and the driver IC [140A] is mounted on the head body [1+120] by being directly attached thereto by face down bonding so that the signal output terminals [141] and the signal input terminals [132] are connected to each other. With respect to claim(s) containing a recitation with respect to the manner in which the claimed head is intended to be employed/positioned with respect to the scanning direction, such manner of positioning does not differentiate the head from the prior art head since the prior head teaches all the structural limitations of the claimed head. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987); [see also MPEP 2113].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 4, 6, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akaha in view of Horio et al (JP 2000-79683).

Akaha discloses all elements of the claimed invention except for the followings:

- One or more outer actuator columns being provided on an outer side of the central actuator columns.
- The actuators of each outer actuator column and the signal input terminals thereof are connected to each other by signal lines passing between actuators of one of the central actuator columns.
- The actuators of each actuator column are arranged at regular intervals so as to be shifted from the actuators of any other actuator column.
- The actuators are arranged in a staggered pattern.

However, Horio et al [see particularly Figure 6] discloses the followings:

- One or more outer actuator columns [three columns on the right-hand-side] being provided on an outer side of one actuator column [the column on the left-hand-side].
- The actuators [35] of each outer actuator column and the signal input terminals [37] thereof are connected to each other by signal lines [36] passing between actuators of one of the central actuator columns.
- The actuators of each actuator column are arranged at regular intervals so as to be shifted from the actuators of any other actuator column [clearly illustrated].
- The actuators are arranged in a staggered pattern [clearly illustrated].

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify each side of the head of Akaha to include the aforementioned features of Horio et al for the purpose of providing a small size ink jet head that can produce gradation and high density dot.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Judy Nguyen whose telephone number is (571) 272-2258. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Judy Nguyen